Short Communication

Porous Activated Carbon Prepared from Highland Barley Straw by Phosphoric Acid Activation as a Conductive Agent for Improving Electrochemical Performance of LiFePO₄ Cathodes

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Herein, porous activated carbon was synthesized from highland barley straw by phosphoric acid activation and used as a conductive agent for LiFePO₄ cathodes. The morphology and microstructure are characterized by scanning electron microscopy and nitrogen adsorption and desorption. The results show that the porous activated carbon convenient three-dimensional porous microstructure. Compared with the conventional conductive agent carbon black Super P, the obtained porous activated carbon presents a high capacity of 153.63 mA h g⁻¹ at 0.1 C, as well as an excellent rate performance and cycling stability. The simple method for the preparation of porous activated carbon as a conductive agent with an excellent electrochemical performance opens up a new opportunity of LiFePO₄ cathodes for widespread applications in lithium-ion batteries.

Keywords: LiFePO₄ cathode; Conductive agent; Biomass; Activated carbon; Highland barley straw

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